4.2.5.2 Site Infrastructure

The ORR site is capable of supporting all of its proposed storage alternatives without major infrastructure modification. Table 4.2.5.2–1 presents a comparison of the annual operating infrastructure resource requirements relative to the availability or capacity for the onsite transportation network, electrical power, and fuel supply.

No Action Alternative

Under this alternative, storage of HEU materials would continue at the Y–12 facility. ORR does not currently store Pu-bearing materials in the form or quantity that would be within the scope of this PEIS, and under No Action no Pu would be shipped to ORR. [Text deleted.] All infrastructure requirements are within site capacities.

Upgrade Alternative

Preferred Alternative: Modify Existing Y–12 Plant for Continued Highly Enriched Uranium Storage

Construction of the Y–12 upgrade to accommodate long-term storage of existing quantities of HEU at ORR would not affect the site infrastructure. Data for construction are presented in Appendix C. Some additional coal would be needed. Since coal availability is governed by usage and not by storage capacity, the additional coal required could be procured through normal contractual means. Site infrastructure requirements for operations are within existing site capacities. As a result, there would be minimal impacts on the site infrastructure.

Collocation Alternative

Construct New Plutonium Storage Facility; Maintain Existing Highly Enriched Uranium Storage Facilities at Y–12 Plant

This option assumes that No Action for HEU storage is taken at Y–12, but that storage for Pu is provided. Construction of the consolidated Pu storage facility at ORR would not affect the site infrastructure. Data for construction are presented in Appendix C. Operations impacts to the ORR infrastructure under this option would be minimal.

Construct New Plutonium Storage Facility and Modify Existing Highly Enriched Uranium Storage Facilities at Y–12 Plant

Construction of a new consolidated Pu storage facility to provide long-term storage of Pu at ORR and modifying Y–12 for long-term HEU storage would not affect the site infrastructure. Data for construction are presented in Appendix C. Operations impacts to the ORR infrastructure under this option would be minimal. As shown in Table 4.2.5.2–1, less than 5 km (3 mi) of roads and less than 10 km (6 mi) of railroad lines would need to be added to the site to accommodate the facility. Also, some additional coal and oil would be needed. Since coal and oil availability is governed by usage and not by storage capacity, the additional coal and oil required could be procured through normal contractual means. All other infrastructure requirements are within site capacities.

Construct New Plutonium and Highly Enriched Uranium Storage Facilities

Construction of a new consolidated Pu and HEU storage facility at ORR would consume approximately 25 percent more materials and resources than building the consolidated Pu storage facility and modifying the existing Y–12 HEU storage facility. However, the impact of constructing these facilities is not expected to result

Table 4.2.5.2–1. Site Infrastructure Changes Required for Operation at Oak Ridge Reservation (Annual)—No Action (2005) and Storage Alternatives

Alternative	Transportation		Electrical		Fuel		
	Roads (km)	Railroad (km)	Energy (MWh/yr)	Peak Load (MWe)	Oil (l/yr)	Natural Gas (m^3/yr)	Coal (t/yr)
No Action							
Site Availability	71	27	13,880,000	2,100	416,000	250,760,000	16,300
Projected usage	71	27	726,000	110	379,000	95,000,000	16,300
Upgrade							
Projected usage	71	27	733,260	111	379,000	95,000,949	16,460
Amount required in excess to site availability	0	0	0	0	0	0	160
Collocation							
New Pu Storage Facility Only							
Projected usage	76	37	779,000	119	427,000	95,000,000	21,800
Amount required in excess to site availability	<5	<10	0	0	11,000	0	5,500
New Pu Storage Facility and Modify Y–12							
Projected usage	76	37	786,260	120	427,000	95,000,949	21,963
Amount required in excess to site availability	<5	<10	0	0	11,000	0	5,663
New Pu and HEU Storage Facilities							
Projected usage	78	37	779,480	119	429,000	94,998,103	22,273
Amount required in excess to site availability	<7	<10	0	0	13,000	0	5,973
Phaseout							
Projected usage	71	27	711,480	108	379,000	94,998,103	15,973
Amount required in excess to site availability	0	0	0	0	0	0	0

Source: DOE 1996e; DOE 1996f; OR LMES 1995e; ORR 1995a:2.

in any significant effects at ORR. Operations impacts to the ORR infrastructure under this option would be minimal. As shown in Table 4.2.5.2–1, less than 7 km (4 mi) of roads and less than 10 km (6 mi) of railroad lines would need to be added to the site to accommodate these facilities. Additional coal and oil required for operations would be procured as stated above for the consolidated Pu storage facility.

Subalternative Not Including Strategic Reserve and Weapons Research and Development Materials

Since the existing ORR site infrastructure would be capable of supporting construction/modification and operation of facilities for the No Action Alternative, the Upgrade Alternative, and the Collocation Alternatives, constructing and operating such facilities without including provisions for storage of strategic reserve and weapons R&D materials could be accommodated as well. Expected reductions in amounts of annual electrical requirements for the various storage facilities are the only site infrastructure changes expected if this subalternative is chosen because electric usage is dependent on the amount of material. [Text deleted.]

Phaseout

Phaseout of the HEU storage mission at Y–12 would have little or no impact on the facilities or site infrastructure. Facilities would need to be decontaminated and decommissioned prior to reuse or dismantlement, and any D&D, if proposed, would be accompanied by further NEPA analysis. The decrease in the annual consumption of utility resources is a small fraction (about 2 percent) of the existing annual usage.